including licensees who have obtained extended implementation authorizations in the 800 MHz or 900 MHz SMR services, either by waiver or under Section 90.629 of the Commission's Rules. However, the rule will apply to SMR licensees only if they offer real-time, two-way voice service that is interconnected with the public switched network.

a. Estimates for Cellular Licensees

The Commission has not developed a definition of small entities applicable to cellular licensees. Therefore, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to radiotelephone companies. This definition provides that a small entity is a radiotelephone company employing fewer than 1,500 persons.[293] Since the Regulatory Flexibility Act amendments were not in effect until the record in this proceeding was closed, the Commission was unable to request information regarding the number of small cellular businesses and is unable at this time to make a precise estimate of the number of cellular firms which are small businesses.

The size data provided by the SBA does not enable us to make a meaningful estimate of the number of cellular providers which are small entities because it combines all radiotelephone companies with 500 or more employees.[294] We therefore used the 1992 Census of Transportation, Communications, and Utilities, conducted by the Bureau of the Census, which is the most recent information available. That census shows that only 12 radiotelephone firms out of a total of 1,178 such firms which operated during 1992 had 1,000 or more employees.[295] Therefore, even if all 12 of these large firms were cellular telephone companies, all of the remainder were small businesses under the SBA's definition. We assume that, for purposes of our evaluations and conclusions in the Final Regulatory Flexibility Analysis, all of the current cellular licensees are small entities, as that term is defined by the SBA. Although there are 1,758 cellular licenses, we do not know the number of cellular licensees, since a cellular licensee may own several licenses.

We assume that all of the current rural cellular licensees are small businesses. Comments filed by small business associations, the Organization for the Protection and Advancement of Small Telephone Companies (OPASTCO), state that 2/3 of its 440 members provide cellular service,[296] and comments filed by the Rural Cellular Association (RCA) state that its members

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[293] 13 C.F.R. § 121.201, Standard Industrial Classification (SIC) Code 4812.

[294] U. S. Small Business Administration 1992 Economic Census Employment Report, Bureau of the Census, U.S. Department of Commerce, SIC Code 4812 (radiotelephone communications industry data adopted by the SBA Office of Advocacy).

[295] U.S. Bureau of the Census, U.S. Department of Commerce, 1992 Census of Transportation, Communications, and Utilities, UC92-S-1, Subject Series, Establishment and Firm Size, Table 5, Employment Size of Firms: 1992, SIC Code 4812 (issued May 1995).

[296] OPASTCO Comments at 1-2 (filed January 9, 1995).

serve 80 cellular service areas.[297] We recognize that these numbers represent only part of the current rural cellular licensees because there might be other rural companies not represented by either association.

b. Estimates for Broadband PCS Licensees

The broadband PCS spectrum is divided into six frequency blocks designated A through F. Pursuant to 47 C.F.R. § 24.720(b), the Commission has defined ``small entity" for Blocks C and F licensees as firms that had average gross revenues of less than $40 million in the three previous calendar years. This regulation defining ``small entity" in the context of broadband PCS auctions has been approved by the SBA.[298]

The Commission has auctioned broadband PCS licenses in Blocks A, B, and C. We do not have sufficient data to determine how many small businesses under the Commission's definition bid successfully for licenses in Blocks A and B. As of now, there are 90 non-defaulting winning bidders that qualify as small entities in the Block C auction. Based on this information, we conclude that the number of broadband PCS licensees affected by the rule adopted in this *Report and Order* includes the 90 non-defaulting winning bidders that qualify as small entities in the Block C broadband PCS auction.

At present, no licenses have been awarded for Blocks D, E, and F for spectrum. Therefore, there are no small businesses currently providing these services. However, a total of 1,479 licenses will be awarded in the D, E, and F Block broadband PCS auctions, which are scheduled to begin on August 26, 1996. Eligibility for the 493 F Block licensees is limited to ``entrepreneur" with the average gross revenues of less than $125 million. However, we cannot estimate how many small businesses under the Commission's definition will win F Block licensees, or D and E Block licensees. Given the facts that nearly all radiotelephone companies have fewer than 1,000 employees and that no reliable estimate of the number of prospective D, E, and F Block licensees can be made, we assume, for purposes of our evaluations and conclusions in this FRFA, that all of the licenses will be awarded to small entities, as that term is defined by the SBA.

c. Estimates for SMR Licensees

Pursuant to 47 C.F.R. § 90.814(b)(1), the Commission has defined ``small entity" for geographic area 800 MHz and 900 MHz SMR licenses as firms that had average gross revenues of less than $15 million in the three previous calendar years. This regulation defining ``small entity" in the context of 800 MHz and 900 MHz SMR has been approved by the SBA.[299]

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[297] RCA Comments at 2 (filed January 9, 1995).

[298] *See* Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, PP Docket No. 93-253, Fifth Report and Order, 9 FCC Rcd 5532, 5581-84 (1994).

[299] *See* Amendment of Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200

The rule adopted in this *Report and Order* applies to SMR providers in the 800 MHz and 900 MHz bands that either hold geographic area licenses or have obtained extended implementation authorizations. We do not know how many firms provide 800 MHz or 900 MHz geographic area SMR service pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of less than $15 million. Since the Regulatory Flexibility Act amendments were not in effect until the record in this proceeding was closed, the Commission was unable to request information regarding the number of small businesses in this category. We do know that one of these firms has over $15 million in revenues. We assume, for purposes of our evaluations and conclusions in this FRFA, that all of the remaining existing extended implementation authorizations are held by small entities, as that term is defined by the SBA.

The Commission recently held auctions for geographic area licenses in the 900 MHz SMR band. There were 60 winning bidders who qualified as small entities under the Commission's definition in the 900 MHz auction. Based on this information, we conclude that the number of geographic area SMR licensees affected by the rule adopted in this *Report and Order* includes these 60 small entities.

No auctions have been held for 800 MHz geographic area SMR licenses. Therefore, no small entities currently hold these licenses. A total of 525 licenses will be awarded for the upper 200 channels in the 800 MHz geographic area SMR auction. However, the Commission has not yet determined how many licenses will be awarded for the lower 230 channels in the 800 MHz geographic area SMR auction. There is no basis to estimate, moreover, how many small entities within the SBA's definition will win these licenses. Given the facts that nearly all radiotelephone companies have fewer than 1,000 employees and that no reliable estimate of the number of prospective 800 MHz licensees can be made, we assume, for purposes of our evaluations and conclusions in this FRFA, that all of the licenses will be awarded to small entities, as that term is defined by the SBA.

V. Steps Taken To Minimize the Burdens on Small Entities

The Commission in this proceeding has considered comments on ways of achieving wider 911 availability and E911 compatibility with wireless telephone services. In doing so, the Commission has adopted alternatives which minimize burdens placed on small entities. First, it

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Channels Outside the Designated Filing Areas in the 896-901 MHz and the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool, PR Docket No. 89-583, *Second Order on Reconsideration and Seventh Report and Order*, 11 FCC Rcd 2639, 2693-702 (1995); Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rulemaking*, 11 FCC Rcd 1463 (1995).

has limited the regulations to mass market two-way voice services.[300] In doing so, it excluded small local specialized mobile services which provide mainly dispatch services and do not provide the mass market services which most users rely on to send 911 calls.[301] It has also excluded mobile satellite systems.[302] Second, it provided for waivers for small rural cellular carriers, and also provided that most services would not be required unless specifically requested by the local emergency service providers.[303] Third, it has taken industry concerns into account by basing the schedule for implementing E911 on that recommended by the Consensus Agreement between the Cellular Telephone Industry Association and public safety organizations, which does not require caller location information until five years after the rules adopted in the Order become effective.[304] Finally, it has made the E911 requirements conditional on (1) a request by a local emergency service provider that is capable of receiving and using the information; and (2) a mechanism for the recovery of costs relating to the provision of the service.[305] Therefore, the burden on small entities will be offset by the requirement that a cost recovery mechanism will be in place before their E911 obligations need to be implemented.

VI. Significant Alternatives Considered and Rejected

The Commission rejected the alternative proposal that the rules should be applicable to all providers of Commercial Mobile voice services because not all CMRS services are mass market voice services whose users expect to be able to use them to call 911. Specifically, the Commission found that the costs of requiring local SMR services to comply with the rules would outweigh the benefits and application of the rules to them, and would give them an incentive to eliminate their interconnection to the public network, which would not be in the public interest.[306] The Commission did not exempt rural cellular carriers from these requirements, as requested by some of commenters, but instead provided for waivers. The Consensus Agreement between the Cellular Telephone Industry Association and public safety organizations indicated that the signatories would work with rural cellular carriers to resolve their problems in good faith, and that the issue of how such carriers would be treated need not delay the final rule, which would be required in the public interest. Instead, reviewing the need for applying the rules to rural cellular carriers could be reviewed on an individualized basis. Moreover, the Commission relied on the representations that many emergency service providers do not use 911 in rural areas, so that the

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300 *See* Section IV. B. 2, *supra.*

301 *See* para. 0, *supra.*

302 *Id.*

303 *See* para. 0, *supra.*

304 *See* Section IV. B. 1, *supra.*

305 *See* para. 0, *supra.*

306 *See* para. 0, *supra.*

requirement that the emergency service providers would have to request and be capable of receiving and using the E911 services would protect carriers from the obligation to provide unneeded services. Further, the requirement that there be a cost recovery mechanism would protect small carriers from having to absorb excessive costs.[307]

The Commission rejected proposals to delay the provision of the upgrades necessary to expand the availability of 911 and the accuracy of location technology because these upgrades will result in saving lives and property and because the requirements of the rules were included in the Consensus Agreement. We rejected the argument that imposing 911 availability requirements on wireless carriers would competitively disadvantage wireless carriers, since several wireless carriers have been voluntarily transmitting 911 calls without a validation requirement. Moreover, the Commission rejected proposals that Federal grade of service and other standards should be developed by the Commission, and instead determined that parties should be allowed to develop standards with monitoring by the Commission, since these issues require a level of expertise which can best be achieved by intra-industry discussions.[308]

VII. Report to Congress

The Commission shall send a copy of this Final Regulatory Flexibility Analysis along with this Order in a report to Congress pursuant of the Small Business Regulatory Enforcement Fairness Act of 1996, codified at 5 U.S.C. Section 801(a)(1)(A). A copy of this RFA will also be published in the Federal Register.

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[307] *See* para. 0, *supra.*

[308] *See* Section IV. C. *supra.*

II. INITIAL REGULATORY FLEXIBILITY ANALYSIS FOR FURTHER NOTICE OF PROPOSED RULEMAKING

I. Reason for Action

This Further Notice of Proposed Rulemaking responds to the petition submitted by the Ad Hoc Alliance for Public Access to 911 to amend the Commission's Rules to require that all newly constructed mobile and portable units be equipped to select the strongest signal whenever a 911 call is placed. Telephone stations for wireless services are not adequately identifying caller location to permit a timely response by emergency services personnel and are not providing 911 service for all caller locations.

II. Objectives and Legal Basis for Proposed Rules

One objective of this Further Notice is to collect additional information on the technical issues related to the improvement of wireless E911 services, including higher accuracy standards for the Automatic Location Identification (ALI), a latency period requirement, and the provision of 911 services without interruption where one wireless provider does not provide complete area coverage. Another objective is to collect information with respect to informing consumers what their wireless phones can and cannot do. A third objective is to determine whether all 911 calls should be transmitted without any preconditions.

The proposed action is authorized under Sections 1, 4(i), 201, 208, 215, 303, 309 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), 201, 208, 215, 303, 309.

III. Description and Estimate of Small Entities Subject to the Rules

The proposed changes in the regulations will apply to providers of cellular, broadband PCS, and geographic area 800 MHz and 900 MHz specialized mobile radio services, including licensees who have extended implementation authorizations in the 800 MHz or 900 MHz SMR services, either by waiver or under Section 90.629 of the Commission's Rules. However, the rule will apply to SMR licensees only if they offer real-time, two-way voice service that is interconnected with the public switched network.

In the Final Regulatory Flexibility Analysis for the *Report and Order*, we have estimated the number of small entities for each category, or else stipulated that all providers are small entities where we were unable to make an estimate. We request comment on whether these estimates should be improved or refined. We especially request comment on the number of small entities in the categories that we were unable to estimate, i.e., cellular service providers; PCS service providers in the D, E, and F Blocks; 800 MHz geographic area SMR licensees; and providers of 800 MHz or 900 MHz geographic area SMR service pursuant to waiver or pursuant

to Section 90.629 of our rules.

IV. Reporting, Recordkeeping, and Other Compliance Requirements

Commercial mobile radio services will be required to improve the accuracy and time of the identification of the location of mobile transmitters and to permit interoperability of their 911 service with those of their competitors and to provide consumer education materials. Equipment used for commercial mobile radio services will have to be capable of providing this information to the local telephone exchanges to which they are connected. Local telephone exchanges will incur costs storing and relaying this information to E911 public safety answering points. We request comment with respect to ways in which these proposed requirements can be modified to reduce the burden on small entities and at the same time meet the objectives of this proceeding.

V. Significant Alternatives Considered and Rejected

The Commission concluded that the 911 and E911 rules adopted in the Report and Order are a first step toward the goal of meeting the Nation's public safety communications needs, and that it is also necessary to begin the task of exploring the need for further action to spur improvements in the features and delivery of the 911 and E911 services. We believe that continuing involvement of the Commission in developing rules that take the resources of small businesses into account as well as the public safety needs are in the public interest. Therefore, the Commission rejected alternative proposals that the future development of the E911 technologies should be left to the market forces and the industry without the Commission's involvement.

The Commission considered and rejected proposals that the rules should be expanded to apply to all providers of Commercial Mobile Radio Services (CMRS) because not all CMRS services are mass market voice services whose users expect to be able to use them to call 911. Specifically, the Commission believes that the costs of requiring local SMR services and 220 MHz licensees operating on 5 kHz channels to comply with the proposed rules would outweigh the benefits and application of the proposed rules to them, and would give them an incentive to eliminate their interconnection to the public network, which would not be in the public interest. Similarly, because it is not certain how multilateration Location and Monitoring Service (LMS) will develop, we concluded that it is premature to propose to require such licensees to provide E911 at this time. In the future if these wireless service providers not covered by the current rules develop into a mobile telephone service like cellular or broadband PCS, we may revisit this decision.

The Commission considered and rejected proposals to adopt a specific technology for providing ALI, because we believe that various technologies are currently under development which can provide more advanced public safety technology than those that are currently

available. The Commission also considered and rejected proposals to adopt rules to require a minimum latency period to locate 911 callers at this time, because the record is insufficient to determine the technical feasibility and the costs of implementing such requirements, especially the financial impact on small business entities.[309] The Commission instead decided to seek comment on these proposals, including the benefits and feasibility of such requirements.

VI. Federal Rules That Overlap, Duplicate, or Conflict with These Proposed Rules

There are no Federal rules which overlap, duplicate, or conflict with the rules we are proposing.

[309] *See* para. 0, *supra.*

APPENDIX C

FINAL RULES

Part 20 of Title 47 of the Code of Federal Regulations is amended as follows:

Part 20 - COMMERCIAL MOBILE RADIO SERVICES

1. The authority citation for Part 20 continues to read as follows:

AUTHORITY: Sections 4, 303 and 332, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, and 332.

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2. Section 20.03 is amended by adding the following definitions in alphabetical order to read as follows:

Section 20.3 Definitions.

Automatic Number Identification. A system which permits the identification of the caller's telephone number.

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Code Identification. A mobile Identification Number for calls carried over the facilities of a cellular or Broadband PCS licensees, or the functional equivalent of a Mobile Identification Number in the case of calls carried over the facilities of a Specialized Mobile Radio Services.

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Mobile Identification Number. A 34-bit number that is a digital representation of the 10-digit directory telephone number assigned to a mobile station.

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Pseudo Automatic Number Identification. A system which identifies the location of the base station or cell site through which a mobile call originates.

Public Safety Answering Point. A point that has been designated to receive 911 calls and route them to emergency service personnel.

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3. New Section 20.18 is added to read as follows:

Section 20.18 911 Service.

(a) The following requirements are only applicable to Broadband Personal Communications Services (Part 24, Subpart E of this chapter) and Cellular Radio Telephone Service (Part 22, Subpart H of this chapter), Geographic Area Specialized Mobile Radio Services in the 800 MHz and 900 MHz bands (included in Part 90, Subpart S of this chapter)and offer real-time, two-way voice service that is interconnected with the public switched network, and Incumbent Wide Area SMR Licensees.

(b) As of [one year after the effective date of the rule], licensees subject to this section must process all 911 calls which transmit a Code Identification and must process all 911 wireless calls which do not transmit a Code Identification where requested by the administrator of the designated Public Safety Answering Point which is capable of receiving and utilizing the data elements associated with 911 service.

(c) As of [one year after the effective date of the rule], licensees subject to this section must be capable of transmitting 911 calls from individuals with speech or hearing disabilities through means other than mobile radio handsets, *e.g.*, through the use of Text Telephone Devices.

(d) As of [18 months after the effective date of the rule], licensees subject to this section must relay the telephone number of the originator of a 911 call and the location of the cell site or base station receiving a 911 call from any mobile handset or text telephone device accessing their systems to the designated Public Service Answering Point through the use of Pseudo Automatic Number Identification and Automatic Number Identification.

(e) As of [five years after the effective date of this rule], licensees subject to this section must provide to the designated Public Service Answering Point the location of a 911 call by longitude and latitude within a radius of 125 meters using root mean square techniques.

(f) The requirements set forth in paragraphs (d) and (e) of this section shall be applicable only if the administrator of the designated Public Service Answering Point has requested the services required under those paragraphs and is capable of receiving and utilizing the data elements associated with the service, and a mechanism for recovering the costs of the service is in place.

APPENDIX D

TABLE A: MAJOR PROVISIONS OF E911 SERVICE NPRM

Implementation Schedule

PHASE	IMPLEMENTATION
One	Within one year after the effective date of a final Order, wireless service providers would be required to relay the location of the base station or cell site receiving a 911 call to the PSAP.
Two	Within three years, the carrier must include an estimate of the approximate location and distance of the mobile unit from the receiving base station or cell site.
Three	Within five years, the mobile unit must be located in three dimensions (*i.e.*, two surface coordinates and height) within a radius of no more than 125 meters, or 410 feet.

Proposed Service Features

911 Availability	Any transmitter that is service-initialized would be allowed to make a 911 call without validation, *e.g.*, when roaming (Phase 1).
911 Call Priority	911 calls would be assigned priority over non-emergency service calls (Phase 1).
Access to TTY	Access by individuals with speech or hearing disabilities through a TTY device (Phase 1).
Re-Ring; Call Back	Capability to permit PSAP attendants to return calls if the call is disconnected (Phase 2).
Common Channel Signalling	Technology to provide additional information similar to wireline E911, *e.g.*, class of service, priority of caller (Phase 2).

Other Issues on Which Comment Was Sought

Equipment Standards	Whether to establish specific requirements for base and mobile transmitters (*e.g.*, ANI and ALI), and the elements of such standards.
Labelling	Whether to require labelling of equipment that does not meet E911 requirements.
Privacy	Whether there are privacy interests in 911 calls and, if so, what measures are appropriate to protect those interests.
Preemption	Whether intrastate regulations conflict with the proposed E911 rules, and whether such regulations should be preempted.

TABLE B: CONSENSUS AGREEMENT BETWEEN CTIA AND PUBLIC SAFETY GROUPS REGARDING WIRELESS E911

Implementation Schedule

PHASE	IMPLEMENTATION
One	■ Within 12 to 18 months after the effective date of a final Order, wireless service providers would be required to relay the location of the base station or cell site receiving a 911 call to the PSAP. ■ ANI and ``pseudo-ANI'' would be passed from carriers to PSAPs. ■ Use of ANI and ``pseudo-ANI'' will provide ability to call the 911 caller back if the call is disconnected; ``automatic re-ring'' would not be required. ■ CTIA favors 18-month deadline; APCO, NENA, and NASNA favor 12 month deadline ■ 911 service would be available to any handset that is service-initialized and available without a requirement for user validation, *e.g.*, to roamers.
Two	Drop Phase Two of *Notice*.
Three [Phase Two under the Consensus Agreement]	■ Within five years, the mobile station must be located in *two* dimensions (*i.e.*, longitude and latitude) within a radius of no more than 125 meters. ■ Accuracy to 125 meters would be measured using root mean square (RMS) techniques, which means that location devices would be required to be accurate to within 125 meters in about 67 percent of all cases. ■ Parties agree to work in good faith to address concerns that in exceptional cases, such as rural areas, carriers will have difficulty in meeting requirements.

Other Proposals

Cost Recovery	■ State and local cost recovery mechanisms are needed to fund both carrier and PSAP investment in E911 technology and 911 cost of service. ■ State or local 911 fees or taxes should not discriminate between wireline and wireless carriers. ■ FCC should declare that state or local 911 fees or taxes reasonably related to costs are not barred as a matter of law.
Legal Liability	■ The parties believe that the wireline experience, in which callers generally have been held to consent implicitly to the disclosure of calling number, location, and associated information, is applicable to wireless 911. ■ The FCC should address and resolve legal liability issues under the Communications Assistance for Law Enforcement Act of 1994, which the parties believe does not preclude location determination and disclosure in the ordinary course of good-faith 911 operations.
TTY	■ The parties agree with Commission proposal that 911 access should be available in Phase I to speech and hearing impaired individuals through means other than mobile radio handsets, such as TTY devices.

Equipment Labelling	■ The parties agree to work on methods and language for consumer education that would not require equipment labelling.